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Breeding of *Agelaius tricolor* in Madera Co., Cal.

BY JOS. MAILLIARD, SAN GERONIMO, CAL.

[Read before the Northern Division of the Cooper Orn. Club, Sept. 15, 1900.]

WHILE making a short stay at a ranch on the southern edge of Merced Co., Cal., during the latter part of April of this year, it was my good fortune to discover a very interesting breeding colony of *Agelaius tricolor*. My first day's prospecting on this ranch developed the fact that large quantities of blackbirds were enjoying a feast upon the newly-irrigated alfalfa fields near the ranch buildings, and that four species were present. These were, of course, *Xanthocephalus xanthocephalus*, *Agelaius g. californicus*, *Agelaius tricolor* and *Scolecophagus cyanocephalus*. The latter were breeding in the trees about the ranch buildings and the *Agelaius g. californicus* had their nests located in the sedge in low spots near the irrigating ditches, but the other two species were evidently not breeding in the immediate vicinity.

Being especially anxious to procure some females of *Agelaius tricolor* upon their actual breeding ground I made diligent inquiry among the vaqueros and ranch hands concerning this species, but no one knew or cared anything about birds. At last, however, one teamster remarked that he had seen quite a number of birds perching on some tules around an artesian well, some three miles away, every time he had passed there lately. In consequence the next morning, April 28, saw me started bright and early for the spot. The alfalfa fields extended the whole way along the irrigating ditch beside which my road lay. It was a cold, raw, foggy morning, not at all calculated to elevate one's spirits, and in consequence I had visions of failure as regarded the particular object in view.

But as far away as the bunch of tules could be discerned, probably nearly a mile, it was evident not only that the spot was the breeding ground of *Age-*

latus tricolor, but also that the young were out of the shell, for a constant stream of the birds, growing thicker and thicker as the well was approached, could be seen flying along the line of the canal. This stream was composed of birds going toward the tules with their bills full of bugs and of equal numbers returning to the fields for fresh supplies.

From this line of flight individuals were constantly branching off into the alfalfa until the stream thinned out to nothing. Upon close approach the tules proved to be a small patch about thirty yards across, surrounded by a shallow pond of water and fenced in so that cattle could not destroy them. The pond was formed partly by the flow from an artesian well some distance off and partly by seepage from the irrigating canal, the bank of the latter forming a dam across the stream from the well.

The water was knee-deep and extremely cold on this particular morning. Upon the edge of the pond small flocks of *Tringa minutilla* and *T. occidentalis*, just taking on the breeding plumage, were quietly feeding, some *Himantopus mexicanus* and *Recurvirostra americana* were wading in it, and a flock of thirty or forty *Charadrius squatarola* in varied plumage were in the field close by, while a couple of *Totanus melanoleucus* greeted me with their peculiar cry. The tules were from six to ten feet high and very thick. Upon near approach the birds gathered on the tips of the tules in vast numbers, while the air above was a mass of fluttering wings.

The noise made by these birds when I was actually among them was almost deafening. In a moment or two there were hundreds fluttering around my head, each trying to make more noise than the next one, and yet every tule

tip outside of a radius of ten or twelve feet from me was loaded with all the birds it could hold up, every extra bird that settled down bending the tips over so that the rest slid off. From the outside of the patch not a nest could be seen, but upon wedging my way in where the tules were shortest an amazing sight presented itself. Nest after nest appeared, becoming more and more numerous away from the outer edge, some only a few inches above the water, some three or four feet, and placed so thickly that it was impossible to force one's way among them without disturbing or even upsetting more or less.

There were often three or four placed directly one above another, and frequently some of the lower ones had been smothered out and abandoned. Where the tules were highest and thickest it was impossible to walk through them and the only means of progression was that of walking upon them and crushing them down for a support. In this very thick part most of the lower nests had been deserted. It seemed at first sight as if these lower tiers must have been last year's nests, but their fresh appearance contradicted this supposition and led me to conclude that either the rapid growth of the tules or the building of so many nests above them had made them too dark and inaccessible. It would have taken a bird some time to work its way down to the bottom ones, which would have been a serious matter with a lot of hungry mouths to feed at short intervals.

Most of the occupied nests contained young, all apparently about the same age, that is from twenty-four to forty-eight hours old. A few, however, contained eggs, mostly in the last stages of incubation. Many of those which had been deserted had in them from one to four decayed or partially dried, and frequently broken, eggs. Yet the greater part of the abandoned nests were empty. Those in the more exposed situations seemed to have been robbed, prob-

ably by the *Buteo swainsoni*, which were numerous in the neighborhood and one pair of which had a nest in a tall poplar tree but a few yards away, and possibly by some of the many *Nycticorax n. naevius* which simply swarmed in the most attractive spots.

The nests were composed entirely of dried grasses, lined with finer parts of same and were more or less lightly woven around the stems of the supporting tules. Many were tilted so much to one side as to scarcely hold the young, small as these were. How the birds could possibly remain in them when a little larger seemed a hard problem to solve. The tules were white with the droppings of the birds, and many of the abandoned nests containing eggs had apparently been deserted on account of being too much exposed to this whitening process. That many of the empty ones had been robbed there is hardly room to doubt. Some young ones were found lying on the ground around the pond, as far away even as seventy-five yards from the tule patch. Also several of the *Buteo swainsoni* shot at this time had a cropful of young birds, though I could not actually identify them as belonging to this species on account of the advanced state of digestion.

The crop of one *Buteo swainsoni* contained two young just hatched and also the remains of two others with portions of the shell still sticking to them and which must have been just on the point of hatching. These were apparently the young of *A. tricolor*. But one nest containing fresh eggs was found, and only one other that could be saved, though I did not overhaul the whole rookery, partly because it was impossible to do so without destroying many nests by trampling or upsetting them, and partly because the mode of progression was exceedingly damaging to one's bare legs and feet, as the edges of the tules cut one's skin in numerous places.

In the line of flight to and from this

breeding ground the majority of birds seemed to be males, but this may have been an illusion caused by their greater conspicuousness. Or perhaps the females dropped out into the fields in closer proximity to their nests. The food which they carried seemed to consist mostly of large, smooth, green caterpillars from the alfalfa fields, and the benefit derived from the presence of such a large number of active insect destroyers must be enormous.

Within a mile of this breeding ground were several nests of *Buteo swainsoni*, some of which were placed in remarkable positions for a hawk, considering the fact that large cottonwood and poplar trees were numerous only a mile or so distant. One nest containing three partly incubated eggs was found in a willow that had been put in the ground to serve as a fence post for barbed wire and which had sprouted into a small bushy tree. This nest was so low that I reached into it from the ground, and yet it was only a few feet from a road through the fields that was used to some extent almost every day.

Another containing four eggs was discovered between a wagon road and the irrigating canal in a small willow that leaned over the latter, the nest being placed about sixteen feet above the water. Yet some of these birds built their nests out on the end of slim branches of very tall trees in such a way as to be safe from the depredations of even the small boy. I revisited this ranch six weeks later and repaired immediately to the tule patch to see what had been done meanwhile by the *A. tricolor*. The tules had doubled their height and were as thick as it was possible for them to grow. Only a few of the birds were in the vicinity and these were most probably some that had hatched out a second setting after the first had been destroyed. Large flocks were seen along the river six miles away, but in very inaccessible tule land among deep overflow channels full of water.

These flocks were mixed up with *A. g. californicus* and some few *Xanthocephalus xanthocephalus*. The breeding place of this latter species remained undiscovered by me, and I could get no information concerning it. Upon this second visit the young *Buteo swainsoni* were found to have all left their nests and were flying about in all stages and varieties of plumage. Two young ones which were shot proved to be especially interesting in that one was in the dark phase and the other in the light, though evidently out of the same nest as they were shot, together with the old one, under such conditions as to make it certain that the group was of one family.



Nesting of the Condor on the Slope of the Cuyamacas, San Diego Co., Cal.

PHOTOGRAPHING A NEST.

MARCH, 1900 found Prof. W. V. Dyche and I at Mesa Grande, making ready for an extended trip through the mountain regions of San Diego and Riverside counties in quest of the eggs of the larger species of birds inhabiting these regions. The professor had a pair of condors located in the Cuyamaca Mountains, in the Boulder Creek country, and had employed reliable parties to watch them.

Just a few days before we were to start on our intended trip, Prof. Dyche received word from the boys that the birds had an egg in the nest, and to come immediately. We accordingly started the next day, taking with us a kodak, provisions and 150 feet of rope for scaling cliffs. After a ride of 22 miles by way of Julian and the Eagle Peak road we arrived at the rancho about two o'clock in the afternoon. After a hasty lunch we saddled our horses and with rope and camera and accompanied by our guides, we traveled over five miles of the steepest, roughest and rockiest country in Southern California, arriving at the foot of the cliff where the nest was situated at about 3.30 p.m.